



FIGHTER BOMBERS

OPERATIONS
GUIDE
ENGLISH - ITALIANO

ACTIVISION
SIMULATION SOFTWARE

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FIGHTER BOMBER

Prepare yourself for the most exciting computer simulation you've ever experienced. You are about to enter the world of true 3D as you've never seen it before.

FIGHTER BOMBER is your opportunity to experience at first hand the thrill of flying some of the world's most advanced strike/attack aircraft and classic jet aircraft of our time. Based on the actual Strategic Air Command's annual bombing competition, the action takes place above South Dakota, North Dakota, Wyoming and Montana.

FIGHTER BOMBER puts you at the controls of aircraft of devastating power. You will feel the G-force increase as you pull full power turns. Each aircraft features its own unique aerodynamically accurate flight envelope and responds just like the real thing. Each of the seven aircraft featured has its own control and instrument panel, gained from close scrutiny of the actual cockpits.

FIGHTER BOMBER creates a whole world within your computer for you to explore, thanks to the VEKTOR GRAFIX environment control system. View the world from an infinite number of points using the unique 'free spirit' view or use the other 11 view points (all with zoom) to gain different perspectives on the action. Fly over rivers, highways, mountains, pastures, farms, cities, lakes – the list of objects featured on the ground is endless.

FIGHTER BOMBER is the future of 3D simulation software – right here and right now.

ACKNOWLEDGEMENTS

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JOHN LEWIS and ANDY CRAVEN

Vektor Grafix

ACTIVISION
SIMULATION SOFTWARE



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* Thanks to USAF/Personality Pics. Library, London (page 7)

CREW BRIEFING

INTRODUCTION

An expectant hush fell over the briefing room as the powerful figure of Major Lance 'Deadeye' Mulcahy took the stage. Glancing around the unusually crowded room, he leant his enormous, battle-scarred frame against the edge of his lectern. With a tap on the microphone, and a nod to his staff officers standing at the back, he began.

"Don't worry fellas, I ain't gonna sing." How many times had he said that, he wondered, and at how many briefings. The War was a long time ago, but he felt every minute of it.

"Ladies and gentlemen, and you flyers at the back there, welcome to Ellsworth Air Force Base." A nod to his left, and a series of slides began to appear on the screen behind him.

"This is the annual Strategic Air Command Bombing Competition; ten years ago, the awesome collection of firepower out there on the tarmac would have been an unthinkable sight on a US Base. But in these days of detente, and goodwill to all men, even the Russkies," he paused for the laugh befitting a man of his seniority, "ha ha – only kidding comrades; where was I? Oh yeah – in these days when the cold war is becoming a fading memory, we of the free world can welcome pilots from all over to join us and test their capabilities against the best competition a defence budget can buy. This doesn't mean we're gonna let them out again, though, eh boys? Ha ha."

The Soviet contingent merely smiled, content in the knowledge that in a few hours they were going to get the chance to wipe the smile of this ageing ace's face for good. The Major continued.

"Behind me you see an aviation legend – The Lancaster Bomber. Without that baby the map of Europe might well be very different today. An enormous beast, it could deliver a payload of staggering weight and destructive power. But it had one major problem – it was just too darn BIG. Little Messerschmitts used to creep up behind it and blow it out of the air. So we had to guard it, with other fighters

like the Spitfire here, and the Hurricane. This was the same with all those big guys – the Wellington, the Stirling, our own B-17 and so on. Near the end of the war it became obvious that what we wanted was both, all in one plane. So we had the Mosquito, and later the F-100, and the British Lightning, that began to combine the speed of a fighter with the pay-load capacity of a bomber, and all in a much smaller package." Deadeye paused, for dramatic effect, and to smooth his moustache for the ladies. Both worked – the audience was his.

"And now we have the bunch of death machines you see outside – the ultimate in flying destruction, Multi-Role Combat Aircraft from all over, from the Soviets' MiG 27 to our own F-15. And in a few hours you will see just what those babies can do. They will fly against each other in mock battle, they will take out strategic sites around this and neighbouring states – without any warheads, I can assure you," he added for the benefit of a few front-benchers who had begun to look worried about the idea of armed MiG 27s flying over the Mid-West.

"Oh, I don't know, Chief," came a voice from the back. "There's a few parts of Montana I guess we wouldn't miss."

"OK Kowalski, very funny – now button it, or you're peeling potatoes the next week." One thing Major Mulcahy hated worse than a smart-ass flyer, it was one who got a bigger laugh than himself. But he recovered.

"So, fellow officers, welcome guests, and members of the press, prepare yourself for a display of combat flying that'll knock your socks off, and may the best man win," he said, peering at the Curtis E LeMay Trophy that stood in pride of place, waiting to be won by the top team of the day.

"As long as it's us, of course," he whispered quietly to himself.

Sitting at the rear of the briefing room was a lone pilot with a hard task ahead of him. He knew the competition – every good pilot did – but this didn't make it any easier. He had to prove to his superiors that he was the best, that he was ready to go up against anything the enemy could throw at him and come out on top. And this trophy was the way to do it.

He had already had a look around the area before landing his jet, checking out the four US states that would be the arena for this mock battle. Some of the most spectacular scenery in the west was here – Mount Rushmore, the famous monument to the four historic presidents, Devils Tower national monument (how many times had he seen 'Close Encounters' – almost as many as 'Top Gun' he guessed), and the plains and towns and cities of the American Mid-West, heartland to the world's leading nation.

He knew the missions he must accomplish in order to score maximum points, to gain the title Ace of Aces, and he knew it was going to be tough – but then, no-one ever said war was easy.

In FIGHTER BOMBER, you are that pilot. But first you must ready yourself with a series of training missions. Sure, you've flown those runs a hundred times, but never was the prize this big, never was the competition this hot.

You have your pick of the best of the world's technology, and also the choice of combat enemies. This doesn't make life any easier, though – any one of the pilots gathered at Ellsworth could take this trophy.

It's your job to see that they don't.

THE CURTIS E LeMAY TROPHY



General Curtis Emerson LeMay – Engineer, innovator, pilot



The Curtis E LeMay Bombing Trophy, the prize every aspiring Bomber Squadron hopes to gain, presented in honour of the retired Commander in Chief of SAC.

Its first victor, in 1958, was the 92nd Bomb Wing of the USAF in a B-52D. From 1977 to 1982, the USAF FB-111A stood victorious, while in more recent years the trophy has been snatched twice by the British 617 and 27 Squadrons, both using the Tornado.

GETTING STARTED

IMPORTANT NOTE

Due to the depth and complexity of FIGHTER BOMBER, some versions may not contain all of the features mentioned in this playing manual. We have attempted to extract the maximum from each computer format but memory limitations, graphics capability and data storage systems prevent us from incorporating some of the more exotic features in certain formats.

We sincerely hope that this in no way spoils your enjoyment of this product.

Controls

Please see the accompany material for keys and controls.

AIRCRAFT SELECTION

FIGHTER BOMBER features seven different aircraft for you to fly. These are:

The McDonnell Douglas F-15E Strike Eagle – USA
The McDonnell Douglas F-4E Phantom – USA
The General Dynamics F-111F Aardvark – USA
The Panavia Tornado IDS – Britain
The Panavia Tornado IDS – Luftwaffe
The Saab AJ37 Viggen – Sweden
The MIG-27 Flogger D – USSR

Information on the ability of each of these machines can be found in the Aircraft Data section of this manual.

These planes are displayed for selection as soon as the game is loaded. A 2D and 3D representation of the various aircraft featured in FIGHTER BOMBER are available to you along with historical and technical information. We suggest you take advantage of this information as later missions will expect you to recognise instantly the kind of aircraft you are engaging.

Selection is made by pointing to the various control boxes on the selection screen and 'clicking' on the appropriate box. When you have selected the aircraft you intend to fly, click on 'SELECT'.

ENEMY AIRCRAFT SELECTION

Uniquely, FIGHTER BOMBER allows you to select the kind of enemy aircraft you will encounter in your various missions. Each enemy aircraft will respond to you differently and you will soon learn which will present the greatest challenge in the various theatres of engagement.

Again, we recommend that you study the 3D images of these aircraft.

FIGHTER BOMBER features seven different aircraft for you to fly against. These are:

- The F-14 Tom-Cat (USA)
- The F-16 Falcon (USA)
- The F-5 Tiger (USA)
- The Mig-29 Fulcrum (USSR)
- The Su-27 Flanker (USSR)
- Mirage 2000 (France)
- Mig-31 Foxhound (USSR)

As before, make your selection by clicking on the appropriate icons.

PILOT'S LOG

Every time you fly, your progress is recorded and filed against your flight log

MISSION SELECTION

For your first flight in FIGHTER BOMBER, we recommend that you select FREE FLIGHT. This will allow you to familiarise yourself with the flight controls and become proficient at some of the more complex manoeuvres you will need to master.

FREE FLIGHT differs to every other stage of FIGHTER BOMBER in that it is the only option that allows you to choose where you start from.

The start-point options available to you are as follows:

- | | |
|---------------|---|
| IN HANGAR | Allows you to practice taxiing |
| ON RUNWAY | Starts you on the runway at Ellsworth |
| AT 30,000 FT | Allows practice of high altitude manoeuvres |
| ABOVE BRIDGE | Allows you to practice bombing runs |
| OVER CITY | Allows you to fly low over Rapid City |
| BEHIND TANKER | Allows practice of mid-air refuelling |
| LINED UP | Allows practice of landing procedure |

Once you are accustomed to your controls and environment, then you can attempt the first of the qualification missions.

THE MISSIONS

These missions are available in succession of completion.

- | | |
|------------------|---|
| COVERT | The covert missions include:

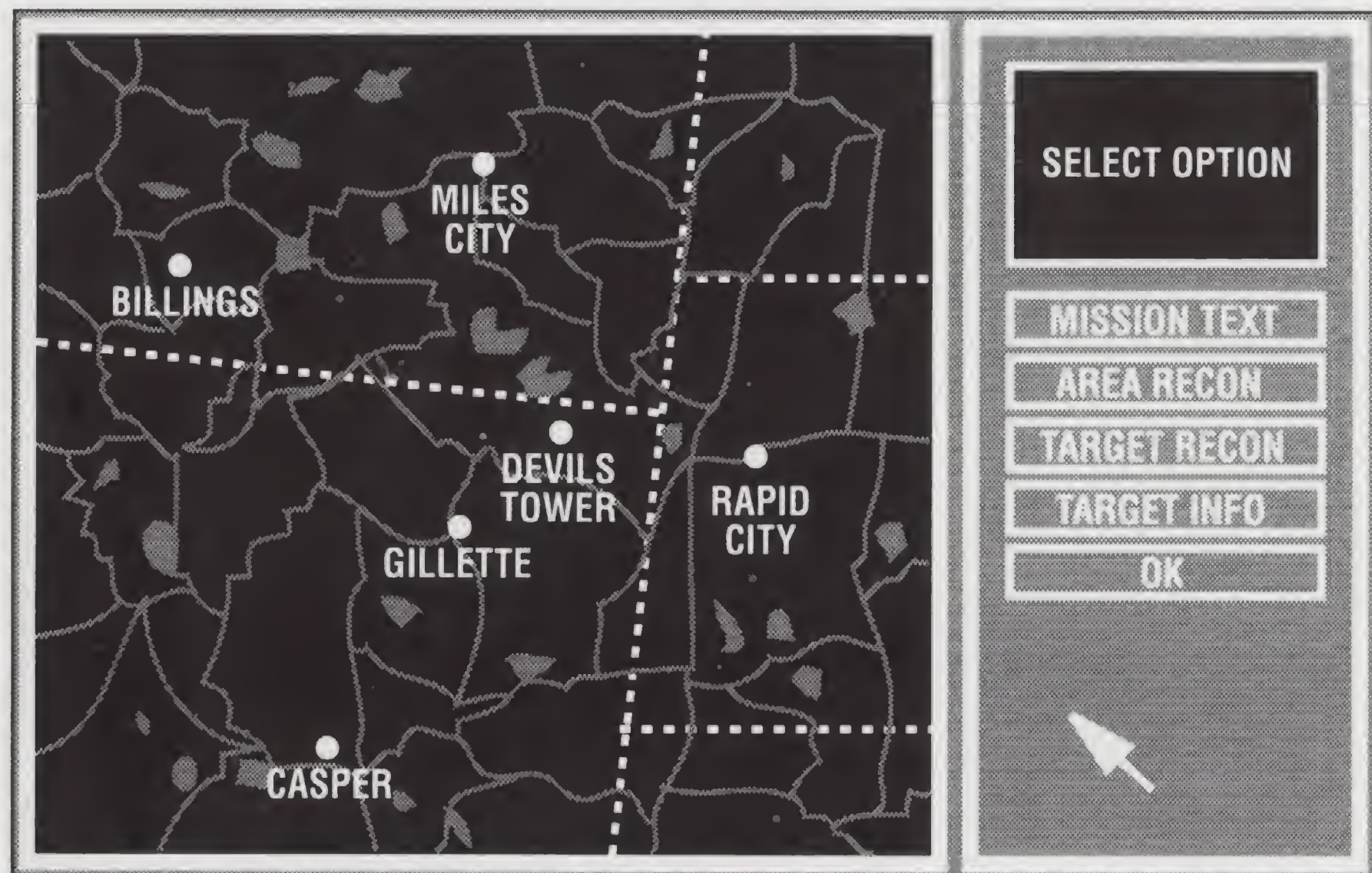
OPERATION 'SLEEPER'
OPERATION 'FARM HOUSE'
OPERATION 'BRIDGE END'
OPERATION 'STRIKE FORCE' |
| TACTICAL | OPERATION 'SPEARCHUCKER'
OPERATION 'NAVARRONE'
OPERATION 'SAM SMASHER'
OPERATION 'AXE ATTACK' |
| STRATEGIC | OPERATION 'TENT BUSTER'
OPERATION 'COOKHOUSE'
OPERATION 'BIG BIRD'
OPERATION 'MOLESTRANGLER' |
| OFFENSIVE | OPERATION 'AMMO DUMP'
OPERATION 'BROKEN ARROW'
OPERATION 'BIG CHIEF'
OPERATION 'FINAL FRONTIER' |

Once a mission has been completed, the mission briefing screen will appear, allowing you to examine your route flown and your mission report.

To continue onto the next mission, click on 'END', then select NEW MISSION from the options given. The next mission will then be made available on the missions menu.

MISSION BRIEFING

This is where the actual missions will be presented to you in visual form. You must fly each mission in order to progress through the game.



MISSION DESIGN

When (and if) you have managed to complete all of the missions in FIGHTER BOMBER, the game certainly does not end there. FIGHTER BOMBER is unique in that it allows you to design your own missions and exchange them with other FIGHTER BOMBER pilots.

Note: While using the mission designer all operations that require on map positioning are performed by pointing the cursor at the desired place and selecting.

SELECT AIR BASE

Initially you will be required to select your home base. Do this by pointing to one of the flashing diamonds and selecting. It is not compulsory that you return to this base. You may, if you require, start at one base, fly your mission, then land at any friendly base available, whether military or civilian.

ADD TARGET

Selecting this option will open a second window requesting you to choose the kind of target you would like to place: ground forces, SAM site, industrial, etc. Select your preference then position the appropriate target.

REFUEL POINT

Once you have selected where to have the refuelling tanker, a small Altitude Selector window will open. Choose the refuelling altitude by clicking on the UP or DOWN arrows. Select when ready.

DELETE LAST

Selecting this option will INSTANTLY remove the last target positioned.

RECONNAISSANCE

Selecting this option opens up a second window that allows you to view target areas in order to aid area and target identification. Target information can also be obtained.

MISSION TEXT

This is your opportunity to describe the mission you have designed. A one-page text editor has been incorporated for this purpose.

DISK MENU

This allows you to SAVE or LOAD a mission. Scroll through your missions using the arrows.

TEST MISSION

This allows you to test the mission you are designing. You fly the mission as normal, firstly, ARMING your jet before flying the mission, then finally entering the DE-BRIEFING section before being put back into the designer.

END

This leaves the mission designer.

ARMING

After the mission has been presented to you, you must decide on the most appropriate weaonry for you to carry into battle.

Weapons are selected by clicking over the weapon icon and dragging it to the under-side view of the aircraft. Some of the weapons, e.g. the Maverick AGM-65, can be carried in multiple ejector racks. Simply drop the same weapon twice at any of the available (flashing) pylons.

Alternatively, you can choose to autoarm your machine with a preset list of weapons, that particularly suit your craft, simply by clicking the AUTO ARM icon.

The weapons available to you are as follows:

1. 23/27 mm Cannon

Used for close-in combat, many aircraft of the late 60's and early 70's were built without a cannon. The philosophy behind this being that with the advent of sophisticated guided missiles, an aircraft would never get within cannon range. The experience of the Vietnam war proved the fallacy of this. Most modern FIGHTER BOMBERS are equipped with a cannon as either an internal permanent fixture or as a centrally mounted pod, the latter option taking up at least one external stores pylon.

2. Air-to-air missile (AAM)

Sidewinder – AIM-9 L Bofors-Rb24 AA-8 Aphid

Type: Close/Medium range AAM


Weight: 195 lb (88.5 kg)

Performance: Accelerating to Mach 2.5 in 2.2 seconds

Range: 11 miles 17.7 km

Mission Time: 60 seconds max.

Warhead: 25 lb 11.4 kg blast/fragmentation with active laser IR proximity fuse.



The Sidewinder AIM-9L is an air-to-air missile guided to the target by locking on to the heat emitted by the enemies' jet pipes. Target acquisition is achieved by activating the missile's seeker head and listening to the missile through the pilot's headset. As the missile locks on to the target, its distinctive growl rises in intensity to a singing crescendo until the pilot lets the missile go. After release the missile will follow the IR source. As it closes with the target, its laser proximity fuse senses when it is close enough for the kill and explodes, sending out hundreds of preformed rods into the enemy.

3. Air-to-surface missile (ASM)

AGM-65A Maverick Bofors Rb-75

Type: Air-to-surface missile
 Weight: 635 lb (288 kg)
 Performance: Classified
 Range: Up to 25 miles after Mach 1.2 release at altitude
 Warhead: 282 lb steel cased blast/fragmentation or 83 lb shaped charge



The AGM-65 is a video-guided surface attack missile. The pilot selects the missile causing its gyro to spin up to speed and light up a weapon ready indicator on his panel. The image from the video camera situated in the nose of the missile is swung round on to the target and the pilot engages lock mode. He then uses either the video display or his head-up gun sight to lock on to the target and releases the weapon. After release the weapon remains locked on to the video image of the target and intelligently tracks to it. In the event of the image being interrupted the missile will follow its last known trajectory.

4. AGM-88A HARM

Type: Anti Radiation Missile
 Weight: 796 lb (361 kg)
 Performance: Speed over Mach 2
 Range: About 11 miles Warhead
 Fragmentation with proximity fuse system



The AGM-88A is a new kind of missile which has developed as a direct result of the ever-increasing technology used in modern warfare. This missile uses the very

radiation emitted by a defending aircraft ECM pod to home in on. The pilot, suspecting that an enemy is in the vicinity, can fire the missile 'blind'. If the enemy emits any kind of electromagnetic radiation the missile will immediately lock on.

5. Mk 13/18 Paveway II LGB

Type: Laser-guided un-powered bomb
 Weight: 1,030 lb (467.6 kg)
 Performance: Free fall
 Range: Dependent on release height
 Warhead: High explosive



The Laser Guided Bomb is a system designed to improve the accuracy of conventional bombs. The target is illuminated with laser light, either by the launch aircraft, a second aircraft, or even ground troops. A ring of sensors around the nose of the bomb detect the reflected laser light and by passing signals to the movable control surfaces of the bomb, keep it aligned with the target. The system is cheap, effective and requires no modification to the aircraft.

6. General Purpose Bomb

Type: Un-guided un-powered bomb
 Weight: 1,000 lb (454.6 kg)
 Performance: Free fall
 Range: Dependent on release height
 Warhead: High explosive



The accuracy of the General Purpose Free Fall Bomb has in the past been solely dependent on the skill of the crew. With today's modern aircraft, the computer takes over the release of the bomb calculating velocity, altitude, wind-shear, etc. The pilot is told when to press the button and the computer does the rest.

7. JP233 MWI - Airfield Denial Weapon

Type: Submunition dispenser
 Weight: 11,200 lb (5,080 kg)
 Payload: Various bomblets



JP233 is a series of submunition dispensers for parachute retarded payloads which include pavement cratering bomblets and anti-personnel mines with or without delay action fuses. Its main use is in denying enemy forces of airfield access and hampering of subsequent repairs.

8. BOZ-100 ECM Pod – Chaff and IR Decoy dispenser

Type: Electronic Counter Measure Decoy dispenser
Weight: 1,000 lb (454 kg)



The BOZ-100 ECM pod is slung from beneath one of the outer wing pylons and enables the aircraft under attack from electronically-guided weapons to defend itself. It does this in two ways. An IR guided missile locks on to the strongest heat source it can find (this is usually the enemy jet pipe) and follows it to detonation. If an alternative (and more intense) heat source, an IR decoy, is ejected from the rear of the aircraft it is possible to fool the missile into following that.

A radar guided missile is locked on to the radar return of the enemy aircraft. The Chaff dispenser ejects a cloud of fine strips of metal foil into the air behind the defending aircraft creating a huge (and to the incoming missile confusing) radar target.

9. Durandal – Runway Penetration Bomb

Type: Airfield denial
Weight: 430 lb (195 kg)
Warhead: High explosive



The Durandal is a simple but effective method of cratering and thus rendering useless enemy paved landing strips.

The weapon is released as low as 185 ft and is immediately retarded by a parachute, causing it to point nose down. The rocket motor then fires the warhead deep into the concrete, creating a crater of up to 2,000 sq ft.

10. Rocket Pods



This weapon has been the mainstay of the ground attack arsenal for many years.

The pilot aims the aircraft at the ground target and fires a salvo of high explosive shells direct in the line of flight. The weapon is particularly effective against mobile armour.

11. ALARM – Air launched anti-radiation missile

Weight: 390 lb
Performance: Not released
Range: Not released
Propulsion: Two stage solid propellant motor
Warhead: Not released



Alarm is the British-built equivalent of the US HARM missile. It is fired in the general direction of enemy positions (e.g. SAM sites) and climbs to around 40,000 ft. It then pitches nose down and falls slowly, under a drogue parachute, while searching for hostile radio/radar emitters. As soon as the enemy 'switches back on', the missiles locks on to the target and fires its secondary motor, homing in on the enemy position.

AIRCRAFT DATA

THE McDONNELL DOUGLAS F-15E STRIKE EAGLE – USA

The United States Air Force

The McDonnell Douglas F-15E Strike Eagle

Now in its second decade of service, the McDonnell Douglas F-15 is undergoing a major development program adapting this highly versatile fighter into an all-weather interdictor and strike aircraft to be designated the McDonnell Douglas F-15E Strike Eagle.

It is a two-man aircraft, the pilot employing a wide angle HUD fed with IR sensor information while the 'GIB' (Guy In Back!) will have head down CRTs for radar, FLIR, digital map and threat warning displays.

By the clever use of conformal fuel packs known as FAST packs, the F-15E can carry an extra 8,820 lb of fuel, enabling it to carry up to 24,250 lb of ordnance on under wing pylons – a combat load comparable to that of the F-111.

The F-15E

Maximum Take Off Load	24,250 lb (11,000 kg)
Maximum speed at altitude	Mach 2.5
Maximum speed at sea level	Undisclosed
Service Ceiling	65,000 ft
Maximum Range	3,450 miles (5,560 km)
Combat Radius (Full Load)	1,480 km
Take off distance (clean)	900 ft

THE McDONNELL DOUGLAS F-4E PHANTOM – USA

The United States Air Force

The McDonnell Douglas F-4E Phantom

The F-4 Phantom will surely rank as one of the classic fighters of all time and is

included in this simulator as a tribute to the aircraft which above all others will always be remembered for getting the job done.

It is estimated that of the 5,173 Phantoms built, some 1,500 will still be in use by the year 2000.

The F-4E, a result of the Vietnam experience, is the strike variant of the aircraft and even by today's high-tech standards remains a formidable weapon. Incorporating an M-61 gun under the nose, an extra fuel cell, advanced avionics and fire control and new engines, the F-4E has been updated to the point that it still maintains a position of importance in many of the world air forces.

The F-4E

Maximum Take Off Load	16,000 lb (7,257 kg)
Maximum speed at altitude	Mach 2.27
Maximum speed at sea level	Mach 1.9 (910 mph), 464 km/h
Service Ceiling	60,000 ft (18,290 m)
Maximum Range	2,660 miles (4,281 km)
Take off distance	3,000 ft (914 m)

THE GENERAL DYNAMICS F-111F AARDVARK – USA

The United States Air Force

The General Dynamics F-111F

The United States Air Force is equipped with an aeroplane which when in development was almost cancelled due to air-frame and avionic problems. The same aircraft carried out the recent bombing of Libya and is now considered to be one of the finest long range bomber. The aeroplane is the General Dynamics F-111F.

The F-111F is powered by two Pratt and Whitney TF30-P-100 engines developing 25,000 lb of thrust and making it by far the most powerful version of this aircraft.

Its maximum speed (clean) at 35,000 ft is Mach 2.2 and is capable of carrying a formidable punch in the form of 4,000 lb. Carried internally or a 20mm M-61 multi-barrel gun. It also has six missile pylons.

The F-111F

Maximum Take Off Load	31,500 lb (14,288 kg)
Maximum speed at altitude	Mach 2.2
Maximum speed at sea level	Mach 1.2 (793 kts), 1,469 km/h, 913 mph
Service Ceiling	60,000 ft (18,290 m)
Maximum Range	4,707 km (2,925 miles)
Combat Radius (Full load)	1,480 km
Take off distance	Under 3,000 ft

THE PANAVIA TORNADO IDS – BRITAIN

The Royal Air Force and the Luftwaffe

The Panavia Tornado IDS (Interdictor Strike Variant)

The British Royal Air Force and the German Luftwaffe are equipped with what is generally acknowledged as the world’s most effective Interdictor Strike Aircraft – the Tornado IDS.

The most remarkable thing about the Tornado is its ability to fly at tree-top height at 550 knots and deliver on to its target a laser-guided bomb with virtual certainty of a hit. It does this thanks to a combination of superb air-frame and power unit coupled with what is arguably the world’s most advanced avionics.

The ‘hands off’ flying of the Tornado is achieved by the use of a ‘Terrain Following Radar (TFR)’ which scans an area in front of the aircraft detecting any obstructions and flying the aircraft over them. It is effective down to an altitude of 50 ft!

The other remarkable aspect of the Tornado is its navigational system which is capable of delivering the aircraft to within 20 ft of its target at a range of several hundred miles without the pilot ever touching the control column. It does this without any incoming information via satellite, ground station, etc.

The Tornado-IDS

Maximum Take Off Load	19,840 lb (9,000 kg)
Maximum speed at altitude	Mach 2.2
Maximum speed at sea level	Mach 1.2 (800 kts), 482 km/h, 921 mph
Service Ceiling	50,000 ft plus (15,240 m plus)
Maximum Range	Undisclosed
Combat Radius (Full load)	863 miles (1,390 km)
Climb to 30,000 ft	Under 2 minutes
g limit	+ 7.5
Take off distance	12,900 ft

THE SAAB AJ37 VIGGEN – SWEDEN

The Royal Swedish Air Force

The Royal Swedish Air Board set the aviation world alight when plans for the ‘System 37’ were announced in the early 1960’s.

It was to be a standardised weapon system integrating many aspects of air defence and attack. The central feature of ‘System 37’ was a manned supersonic aircraft – the Saab Viggen.

The aeroplane is uniquely configured with a fixed 400 sq ft wing preceded by a canard foreplane which gives the aircraft an excellent STOL (short take off and landing) and turn radius.

The power plant of the Saab is a license-built Pratt and Whitney two-shaft turbo fan developing 25,970 lb of thrust enabling the aircraft to reach 32,800 ft from a standing start in just 100 seconds. As a weapon platform, the Viggen is outstanding with a huge variety of stores capability.

The Saab Viggen AJ37

Maximum Take Off Weight	6,000 kg (External)
Maximum speed at 36,100 ft	Mach 2 (1,146 kts), 2,124 km/h, 1,320 mph
Maximum speed at 330 ft	Mach 1.2 (793 kts), 1,470 km/h, 914 mph
Service Ceiling	60,000 ft (18,290 m)
Maximum Range	Undisclosed
Combat Radius (Full Load)	296 miles (476 km)
Climb to 32,810 ft	1 minute, 40 seconds
g limit	+12 (ultimate)
Take off distance	400 m (1,312 ft)

THE MiG-27 FLOGGER-D – USSR

The Soviet Air Force

The Mikoyan/Gurevich MiG-27 (Flogger D)

Entering service pre-1974 this single-seat tactical attack aircraft with secondary reconnaissance capability is powered by a single Turmansky R-29B afterburning turbofan rated at 17,640 lb dry and 25,350 lb with full afterburner.

Generally derided by some aircraft writers as being under-powered and of poor manoeuvrability, the Flogger shows neither of these failings when observed at close hand. Its characteristic sloping nose has attracted the nick-name 'Ducknose' amongst its pilots. The reason for the slope is to allow the pilot the maximum view of the ground in very low-level surface attack missions.

Contained within the nose are the advanced (and secret) avionics. The aircraft probably has some sort of TFR along with Inertial Navigation System which gives it a similar capability to Britain's Tornado. It is unlikely that the Flogger will have the same level of sophistication as the airframe dates back to the late 1960's. Upgraded avionics, however, will most certainly have been installed and this single seat attack aircraft would not be taken lightly by any adversary.

The MiG-27

Maximum Take Off Weight	4,000 kg (External)
Maximum speed at altitude	Mach 1.7 (975 kts), 807 km/h, 1,123 mph
Maximum speed at sea level	Mach 1.1 (726 kts), 1,395 km/h, 836 mph
Service Ceiling	52,495 ft (16,000 m)
Maximum Range	Undisclosed
Combat Radius (Full Load)	Undisclosed
Climb rate	Undisclosed
g limit	Undisclosed
Take off distance	800 m (2,625 ft)

WEAPON DATA

THE McDONNELL DOUGLAS F-15E - USA

Individual Weapon Data

Total external stores weight: 24,250 lb (11,000 kg)
Number of hard-points: Under wing: 4
Fuselage: 5
Hard-point rating: Outer wing: 1,000 lb
Inner wing: 5,100 lb
Fuselage: 1,000 lb
Centre line: 4,500 lb

Weapon	Type	Guidance	Position	Weight Factor
Cannon	Single 6-barrel 20 mm General Electric M61A1 Vulcan	None	Wing-root	Nil
AIM-20	AAM	Radar	Any external	195 lb
AGM-65A Maverick	ASM	Video	Any external 436 lb (Fragmentation shaped charge)	635 lb
GBU-12 PAVEWAY II	Bomb	Laser	Any external	1,301lb
GBU-10 PAVEWAY II	Bomb	Laser	Any external	2,000 lb
Rockeye Mk 20	Cluster bomb	Free fall	Any external	2,000 lb
SNAKE EYE	Bomb	Free fall	One per outer wing pylon/500 lb x 6 retarded per wing carried in tandem triplets on two multiple ejector racks	

THE McDONNELL DOUGLAS F-4E — USA

Individual Weapon Data

Total external stores weight: 16,000 lb (7,257 kg)
Number of hard-points: Under wing: 4
Fuselage: 5
Hard-point rating: Outer wing: 2,240 lb
Inner wing: 3,500 lb
Fuselage: 1,000 lb
Centre line: 3,500 lb

Weapon	Type	Guidance	Position	Weight Factor
Cannon	Single 6-barrel 20 mm General Electric M61A1 Vulcan	None	Under nose	Nil
AIM-20	AAM	Radar	Any external	195 lb
AGM-65A Maverick	ASM	Video	Any external 436 lb (Fragmentation shaped charge)	635 lb
GBU-12 PAVEWAY II	Bomb	Laser	Any external	1,301lb
GBU-10 PAVEWAY II	Bomb	Laser	Any external	2,000 lb
Rockeye Mk 20	Cluster bomb	Free fall	Any external	2,000 lb
SNAKE EYE	Bomb	Free fall	One per outer wing pylon/500 lb x 6 per wing carried in tandem triplets on two multiple ejector racks	

THE GENERAL DYNAMICS F-111F – USA

Individual Weapon Data

Total external and internal stores weight: 31,500 lb (14,288 kg)
Number of hard-points: Under wing: 6
Fuselage: Internal weapons bay
Hard-point rating: Outer wing (swing): 6,000 lb
Inner wing (swing): 6,000 lb
Inner wing (fixed): 6,000 lb
Fuselage Internal weapons bay: 4,000 lb

Weapon	Type	Guidance	Position	Weight Factor
Cannon	Single 6-barrel 20 mm General Electric M61A1 Vulcan	None	Under nose	Nil
AIM-9B/L Sidewinder	AAM	Heat seeking	Any external	195 lb
AGM-65A Maverick	ASM	Video	Any external 436 lb (Fragmentation shaped charge)	635 lb
GBU-12 PAVEWAY II	Bomb	Laser	Any external	1,301lb
GBU-10 PAVEWAY II	Bomb	Laser	Any external	2,000 lb
Rockeye Mk 20	Cluster bomb	Free fall	Any external	2,000 lb
SNAKE EYE	Bomb	Free fall	One per outer wing pylon/500 lb x 6 retarded per wing carried in tandem triplets on two multiple ejector racks	

THE PANAVIA TORNADO IDS – BRITAIN

Individual Weapon Data

Total external stores weight: 19,840 lb (9,000 kg)
Number of hard-points: Under wing: 4
Fuselage: 5
Hard-point rating: Outer wing: 1,000 lb
Inner wing: 3,000 lb
Fuselage: 4,000 lb
Centre line: 2,000 lb

Weapon	Type	Guidance	Position	Weight Factor
Cannon	Twin 27 mm Mauser 360 rounds per gun	None	Internal	Nil
AIM-9B/L Sidewinder	AAM	Heat seeking	Any external	195 lb
AGM-65A Maverick	ASM	Video	Any external 436 lb (Fragmentation shaped charge)	635 lb
ALARM	Anti-radiation	Radar	Any external	390 lb
JP233	Airfield denial	None	Fuselage	4,000 lb
MARK 13/18 PAVEWAY	Bomb	Laser	Any external	1,301 lb
GENERAL PURPOSE	Bomb	Free fall	Any external	1,000 lb

THE SAAB AJ37 VIGGEN – SWEDEN

Individual Weapon Data

Total external stores weight: 13,228 lb (6,000 kg)
Number of hard-points: Under wing: 4
Fuselage: 3
Hard-point rating: Outer wing: 1,102 lb
Inner wing: 2,205 lb
Fuselage: 1,102 lb
Centre line: 2,205 lb

Weapon	Type	Guidance	Position	Weight Factor
Cannon	Single 30 mm KCA Oerlikan	None	Internal	Nil
Rb-24 Sidewinder	AAM	Heat seeking	Any external	195 lb
Rb-75 Maverick	ASM	Video	Any external 436 lb (Fragmentation shaped charge)	635 lb
Rb-05A	ASM	Radar	Any external	672 lb
Bofors M70X	Rockets	None	Any external	1,000 lb
GENERAL PURPOSE	Bomb	Free fall	Any external	1,000 lb

THE PANAIA TORNADO IDS – GERMANY

Individual Weapon Data

Total external stores weight: 19,840 lb (9,000 kg)
Number of hard-points: Under wing: 4
Fuselage: 5
Hard-point rating: Outer wing: 1,000 lb
Inner wing: 3,000 lb
Fuselage: 4,000 lb
Centre line: 2,000 lb

Weapon	Type	Guidance	Position	Weight Factor
Cannon	Twin 27 mm Mauser 360 rounds per gun	None	Internal	Nil
AIM-9B/L Sidewinder	AAM	Heat seeking	Any external	195 lb
AGM-65A Maverick	ASM	Video	Any external 436 lb (Fragmentation shaped charge)	635 lb
ALARM	Anti-radiation	Radar	Any external	390 lb
MW1	Airfield denial	None	Fuselage	4,000 lb
MARK 13/18 PAVEWAY	Bomb	Laser	Any external	1,301 lb
GENERAL PURPOSE	Bomb	Free fall	Any external	1,000 lb

THE MiG FLOGGER-D – USSR

Individual Weapon Data

Total external stores weight: 10,250 lb (4,660 kg)
Number of hard-points: Inner wing: 2
Outer wing (jettisonable none swing): 2
Fuselage: 2
Centre line: 1
Hard-point rating: Outer wing: 1,021 lb
Inner wing: 1,102 lb
Fuselage: 1,102 lb
Centre line: 2,205 lb

Weapon	Type	Guidance	Position	Weight Factor
Cannon	23 mm 6-barrel 700 rounds	None	Internal	Nil
Cannon GSh-B	23mm pod-mounted 14 degree downward pointing for ground traffing. 700 rounds	None	Innter wing only	250 lb
AA-8 Aphid	AAM	Heat seeking	Any external	121 lb
AS-7 Kerry	ASM	Laser	Centre line	2,205 lb
FAB-500	Bomb	Laser	Any external	1,102 lb
FAB-250	Bomb	Free fall	Any external	551 lb
UB-32-57	55 mm rockets	None	Any external	1,102 lb
BETAB-250 Airfield denial (Rocket)	Bomb	None	Any external	551 lb

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